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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,471	02/12/2002	Yuefeng Xie	PSU99-2122	4114

7590

03/08/2005

John J Elnitski Jr
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EXAMINER

CINTINS, IVARS C

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,471

Applicant(s)

XIE, YUEFENG

Examiner

Ivars C. Cintins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 15-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

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Claim 15 is objected to because the term “compressedible” (line 7) appears to be a typographical error. Applicant should change this term to “compressed.”

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-20 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Rieber (U.S. Patent No. 5,595,667) in view of Hirs (U.S. Patent No. 4,048,068). Rieber discloses removing suspended solids from a liquid (col. 1, lines 55-56) with a filter material comprising crumb rubber (col. 5, line 26; and col. 7, lines 28, 30, 43 and 60) obtained from tires (col. 4, line 39), which crumb rubber has the recited particle size (col. 3, lines 6-17). Accordingly, this primary reference discloses the claimed invention with the exception of the recited flow direction (i.e. downflow), and the use of additional filtration materials (claims 18 and 19). Hirs discloses a downflow filter, and further teaches utilizing plural filtration materials including anthracite (col. 4, lines 45, 57 and 66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the filtration system of Rieber with the downflow filter structure of Hirs, in order to facilitate contact between the filtration material (i.e. crumb rubber) and liquid undergoing treatment in this primary reference system. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the thus modified primary reference system with an additional filtration layer of anthracite, as further suggested by Hirs, in order to increase the filtration capability of this modified primary reference system. Applicant should note that upon modification of the primary

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reference in the manner proposed above, the rubber particles of this modified primary reference will be stacked, one upon another; and since crumb rubber particles are compressible, particles near the bottom of the filter bed will inherently be compressed due to the weight of the particles thereabove, to produce the recited porosity gradient.

Dew (U.S. Patent Publication No. 2003/0111431) discloses compressing filtration media in a filter bed in order to produce a porosity gradient through this filter bed.

Applicant's arguments filed December 21, 2004 have been noted and carefully considered but are not deemed to be persuasive of patentability. Applicant points out that crumb rubber media is compressible which allows the porosity between rubber particles to decrease through the filter bed; and argues that neither Rieber nor Hirs suggests filtering liquid downwardly through stacked crumb rubber media in order to produce this desired effect. It is pointed out, however, that although Rieber is silent as to the direction of liquid flow through the crumb rubber particle filtration media of this primary reference system, most liquid filtration is conducted in a downflow manner through particulate filter beds, in order to eliminate the need for additional hardware to restrain a particulate filter bed in an upflow filter. In any event, Hirs clearly teaches filtering a liquid downwardly through a particulate bed of filtration material, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the filtration system of Rieber with the downflow filter structure of Hirs, in order to facilitate contact between the filtration material and liquid undergoing treatment in this primary reference system. As for the fact that neither reference discloses that crumb rubber particles are compressible, and will therefore produce a filter bed having a porosity gradient, it is axiomatic that one who performs the steps of a process must, in so doing, necessarily produce all of its

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advantages, for these advantages naturally flow from it, and are an inseparable part of it. Mere recitation of a newly discovered function or property that is inherently possessed by things in the prior art does not cause a claim drawn to those things to distinguish over the prior art. *General Electric. Co. v Jewel Incandescent Lamp Co.*, 67 USPQ 155 (1945); *In re Oelrich*, 212 USPQ 323 (C.C.P.A. 1981); *In re Best*, 195 USPQ 430 (C.C.P.A. 1977); *In re Swinehart*, 169 USPQ 226 (C.C.P.A. 1971).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is (571) 272-1155. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Duane Smith, can be reached at (571) 272-1166.

The centralized facsimile number for the USPTO is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ivars C. Cintins
Primary Examiner
Art Unit 1724

I. Cintins
March 5, 2005